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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,684	03/20/2001	Ron Dembo	13408.00007	1100

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EXAMINER

DASS, HARISH T

ART UNIT

PAPER NUMBER

3628

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,684

Applicant(s)

DEMBO ET AL.

Examiner

Harish T Dass

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-19 and 24-29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, particularly, an abstract idea.

The Examiner notes that the disclosed invention is within the technological arts. The claimed invention is also noted not to be a computer program, data structure, a natural phenomenon, a non-descriptive material per se. The claimed invention does not include a series of steps to be performed by a computer. The claimed invention also is not a product for performing a process, nor is it a specific machine or manufacture. The claimed invention is not a specific tangible machine or process for facilitating a business transaction. Claims 1-19 and 24-29 do not appear to correspond to a specific machine or manufacture disclosed within the instant specification and thus encompass any product of the class configured in any manner to perform the underlying process. Claims 1-19 and 24-29 do not appear to correspond to a specific machine or manufacture, and thus encompass any product of the class configured in any manner to perform the underlying process. The claimed invention of claims 1-19 and 24-29 are also do not include a post-computer process activity or a pre-computer process activity. Thus, no physical transformation is performed, no practical application in the

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technological art is found. Consequently, claims 1-19 and 24-29 are analyzed based upon the underlying process, and are thus rejected as being directed to a non-statutory process.

See *State Street Bank & Trust Co. V. Signature Financial Group Inc.*, 47 USPQ2d 1597 (Fed. Cir. 1998) where the Federal Circuit held that: "[T]he transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it provides "a useful, concrete and tangible result".

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10, 15-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dembo (US 5,148,365) in view of Moor et al (herein after Moore; US 5,446,885).

Re. claims 1 15-20, 24-29 Dembo discloses selecting a set of instruments, each instrument in said set having a model defined therefore, each model operating on at least one risk factor to produce a value for said instrument, selecting a set of scenarios,

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each scenario comprising a risk factor value for each risk factor operated on by said models of said instruments at least a first and second time interval and each scenario having a probability value assigned thereto, said probability value representing the likelihood of said scenario occurring, step of modifying said set of scenarios to change at least one risk factor value to produce a new risk metric, said at least one risk factor value is changed such that said value does not change with time, step of selecting a first subset of said set of instruments and determining a risk metric and selecting a second subset of said instruments wherein at least one instrument in said first subset is replaced with another instrument produce a new risk metric, databases which store information for options (instruments) [Abs; C1 L4-L67; C2 L43 to C3 L12; C4 L50 to C5 L12; C8 L27-L37].

Dembo, explicitly, does not disclose, applying said selected set of scenarios to said set of instruments to produce a risk value for each instrument in said set of instruments for each scenario in said set of scenarios for each time interval, storing in a database each instrument risk value produced for each instrument in said set, and for a portfolio of instruments comprising at least a subset of said set of instruments, producing a desired risk metric from said associated probabilities and said determined risk values for each instrument of said portfolio by retrieving said stored risk values from said database, and step of storing said produced risk metrics in said database step of determining a credit exposure risk for at least one first party who is counter party for at least one of said instruments in said set of instruments, determining a subset of said set of instruments for which said first party is the counter party and determining the credit

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exposure for said first party by retrieving said stored values and said associated probabilities from said database and risk engine, producing a second measure of said at least one risk metric by combining associated probabilities and said second risk values for said altered instruments with said first stored risk values for unaltered instruments in said set of instruments retrieved from said database to produce a second measure of said at least one risk metric, and proposed transaction comprises altering the amount of at least one instrument in said set of instruments, and wherein said proposed transaction comprises adding an instrument to said set of instruments.

However, Moore discloses applying said selected set of scenarios to said set of instruments to produce a risk value for each instrument in said set of instruments for each scenario in said set of scenarios for each time interval, storing in a database each instrument risk value produced for each instrument in said set, and for a portfolio of instruments comprising at least a subset of said set of instruments, producing a desired risk metric from said associated probabilities and said determined risk values for each instrument of said portfolio by retrieving said stored risk values from said database, and step of storing said produced risk metrics in said database and step of determining a credit exposure risk for at least one first party who is counter party for at least one of said instruments in said set of instruments, determining a subset of said set of instruments for which said first party is the counter party and determining the credit exposure for said first party by retrieving said stored values and said associated probabilities from said database and risk engine (GRMS – Global Risk Management system) [Abs; figures 1-7; C1 L8 to C2 L49; C3 L8-L27; C3 L48-L63; C4 L19-L36; C14

L7-L12; C30 L25 to C31 L47]. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to modify the teaching of Dembo and include a system and applications of produce set of risk values, store the values in database and retrieve the values from database to reuse, as taught by Moore, to tabulate the risk values calculated for different set of parameters for distribution and future use.

Further, it is well known of one of ordinary skill in the art of statistics and probability math that computing probabilities of events in finite sample is often greatly simplified by use of rules for permutations and combinations. Furthermore proposed transaction comprises altering the amount of at least one instrument in said set of instruments, and wherein said proposed transaction comprises adding an instrument to said set of instruments are business decisions and not an inventive idea.

Re. Claim 2, Dembo does not disclose defining whether each instrument value produced is stored in step (iv) as an individual instrument value or is aggregated with at least one other instrument value and stored as an aggregated value. However, Moore discloses defining rules, storing data separately, or aggregated [Abs; C1 L8 to C2 L50; C5 L48 to C6 L15; C17 L57-L62; C24 L37-L63; C30 L25-L67]. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to modify the teaching of Dembo and include define values as individual or aggregate, as taught by Moore, to tabulate appropriate values for situation and scenario.

Re. Claim 3, Dembo discloses said user first selects a subset of instruments of interest from said set of instruments and said desired risk metric is produced for said subset by retrieving determined risk values for each instrument in said subset from said database [Abs; C1 L6-L18; C2 L57 to C3 L55].

Re. claims 4-10, Dembo, explicitly, does not disclose risk factor values for each said risk factor are also stored in said database, definitions of portfolios of instruments stored in said database are predefined, wherein said definitions of portfolios are stored in said database, and check is first performed to determine if corresponding risk values for an instrument are already present in said database and risk values are only produced for those not already present, are performed in parallel (processing modules) on subsets of said set of instruments, performed by at least two users (workstations), each of said at least two users producing a risk metric for a different selected subset of said set of instruments, and performed in parallel by each of said at least two users. However, Moore discloses such steps [C1 L8 to C2 L50; C13 L24-L60; C17 L45 to C18 L23]. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to modify the teaching of Dembo and include storing values, definitions in database and checking if the value already exists, as taught by Moore, to save time, a common practice in business, computer and engineering such as developing tables, checking ID and password, etc. In communication, control and business multiprocessing (multithreads) are commonly known and all of known operating systems support parallel processing, and it is well known that commonly used

NT platform is used by many users (workstations) and users (two, three, ...) can use the same software application at the same time (e.g. WORD).

Re. Claims 21-22, Dembo discloses a user interface to allow a user to define a portfolio of instruments for said aggregating engine to operate on, wherein defined portfolios are stored in said database [C8 L12-L25; C16 L27-L37].

Re. Claim 23 Dembo, explicitly, does not disclose least two risk engines, each of said at least two risk engines operating in parallel to produce instrument values for a subset of said set of instruments. However, Moore discloses such steps [C15 L53-59]. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to modify the teaching of Dembo and include several risk engines (GRMS) operating in parallel, as taught by Moore, to add redundancy in case one system fails the user switch to next system. It is well known that most of DB systems are redundant and synchronized in recover data in case one of the database engines fails.

Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dembo in view of Moore, as applied to claim 1 above, and further in view of Ohata et al (herein Ohata; US 5,864,857)

Re. Claims 11-14 Dembo, explicitly, does not disclose wherein said database is organized as a multi-dimensional structure, one axis of said structure representing instruments, another axis of said structure representing scenarios and another axis of said structure representing time, wherein data is read from and written to said database in multi-dimensional groupings, wherein said grouping includes a selected amount of adjacent data from each of said axes of said structure, wherein said selected amount of adjacent data on a first axis differs from said selected amount of data on a second axis, and wherein the total size of storage required for said multi-dimensional groupings does not exceed a preselected size. However, Ohata discloses such steps [Abs; C1 L5 to C4 L37; C9 L1-L67; C12 L45 to C13 L5].]. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to modify the teaching of Dembo and include processing and storing multi-dimension data, as taught by Ohata, to pair the data and store them on a page of fast retrieval.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 CFR ' 1.111 (c) to consider the references fully when responding to this action.

US Pat 6,27,8981 to Dembo et al, August 21, 2001 "Computer-implemented method and apparatus for portfolio compression", this invention discloses data processing, and in particular to a computer-implemented method and apparatus for

compressing a portfolio of financial instruments to enable, for example, more efficient risk management processing than is otherwise achievable with an uncompressed portfolio.

US Pat 6,078,904 to Rebane, June 20, 2000 "Risk direct asset allocation and risk resolved CAPM for optimally allocating investment assets in an investment portfolio", this invention discloses Risk Direct Asset Allocation and Risk Resolved CAPM, overcomes the limitations of conventional portfolio design methods by determining for an individual investor that investor's risk tolerance function and selecting a monetary allocation of investment assets according to both the risk tolerance function, and quantifiable risk dispersion characteristics of a given allocation of investment assets in the portfolio.

US Pat 5,303,328 to Masui, April 12, 1994 "Neural network system for determining optimal solution", this invention discloses a neural network system includes an input unit, an operation control unit, a parameter setting unit, a neural network group unit, and a display unit, with the present invention, as compared with the conventional neural network, there can be obtained better solutions to an optimization problem at a high speed. Moreover, the solutions thus attained can be limited to feasible solutions satisfying constraints. In addition, in the securities portfolio problem described as an example of the mathematical programming problem, distribution ratios can be employed to solve the problem.

US Pat 5,819,238 to Fernholz, October 6, 1998 "Apparatus and accompanying methods for automatically modifying a financial portfolio through dynamic re-weighting

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based on a non-constant function of current capitalization weights", this invention discloses an apparatus and methods for automatically modifying a financial portfolio having a pre-defined universe of securities, that tracks a given capitalization weighted index, through dynamic re-weighting of a position held in each such security, wherein a current weight accorded to each such security, relative to others in the portfolio, is proportional to a non-constant function of current capitalization weights of the securities in the index. The invention is particularly, though not exclusively suited, for use in managing an index fund composed of a pre-defined set of equity securities.

ProQuest NPL article "Banamex cuts the risk designer-style, Wall Street & Technology, New York; Mar 1994, Zeher, discloses RiskWatch Risk Management OOP.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harish T Dass whose telephone number is 703-305-4694. The examiner can normally be reached on 8:00 AM to 4:50 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung S Sough can be reached on 703-308-0505. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.


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Harish T Dass *HTD*
Examiner
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